Appendix A: Summary of Current Conditions, Foreseeable Uses and Developments, Potential Effects, Assessment of Future Performance and Other Regulatory Controls

Use	Current Conditions and Foreseeable Development	Shoreline Processes Effected / Potential Impacts	Effect of SMP Policies and Regulations – Expected Improvements	Effect of Other Regulatory Programs
Commercial Development	Current Conditions: Commercial uses are concentrated in the City's downtown area (Reach A, B, C, and X). There are no commercial uses on Lake Sammamish. Most of the City's	Commercial development has, in the past, contributed to increased impervious surfaces and degraded water quality. It has also involved installation of shoreline armoring and riparian vegetation removal, resulting in altered hydrology, loss of habitat functions and loss of recruitment potential for LWD. Ecological Functions at Risk: Riparian Habitat Water Quality Hydrology	Improvements: Proposed SMP establishes policies for prioritizing water- oriented commercial uses; for non-water oriented commercial uses the SMP requires restoration of impaired shoreline/riparian vegetation and public access. (7.1.2) Proposed SMP limits new/additional shoreline stabilization and armoring. (5.12, 6.1.4, 7.1.3)	City Permits and Regulations: City critical areas requirements.
Bevelopment				City approved Shoreline Substantial Development Permit
				City building permits & clear and grade permits.
	commercially zoned areas are developed with non-water oriented uses.			NPDES Construction Stormwater General Permit and Coverage.
	Foreseeable Development: Commercially zoned lands within the			NPDES Individual Permit for wastewater discharge to surface
	City are primarily developed. Opportunities for new commercial			waters.
	development are extremely limited.			State and Federal Programs:
	Future redevelopment is possible. Based on the City's Comprehensive Plan, it is very unlikely that non-commercially zoned lands would convert to commercial uses.			Federal Endangered Species Act (ESA) – All projects that trigger the need for a federal permit or use federal funding are subject to environmental review under the ESA. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration Fisheries service (NOAA Fisheries) administer the ESA Section 7 compliance process. These agencies must verify that federal projects will not jeopardize any fish or wildlife species listed as endangered or threatened. The USFWS and NOAA require projects to implement specific conservation measures to protect listed species. This helps ensure that shoreline developments will not impact threatened Chinook salmon in Lake Sammamish and Issaquah Creek.
				Federal Rivers and Harbors Act Section 10 – The purpose of Section 10 is to prohibit the obstruction or alteration of navigable waters of the U.S. Like the state's HPA program, this law regulates the size, location, configuration, and materials used to construct (or reconstruct) docks, floats, boat lifts and other in-water structures. The law sets maximum dimensional standards for docks and lifts on Lake Sammamish and requires that docks be constructed of materials that allow light penetration. Before issuing a Section 10 Permit, the Corps of Engineers must coordinate with the USFWS and NOAA to ensure that the proposed project will not impact federally listed species. The law also requires mitigation for impacts of new or reconstructed docks or lifts. Federal Clean Water Act - Any project that discharges dredged or fill material into a water of the United States, including streams, lakes and wetlands, requires a Section 404 permit from the U.S. Army Corps of Engineers (Corps). Hydraulic Project Approval (HPA) — Administered by the Washington State Department of Fish and Wildlife (WDFW), applies to any construction activity in or near the waters of the state.
				Section 401 Water Quality Certification -from the Department of Ecology (Ecology). Issuance of a certification from the Department of Ecology means Ecology anticipates the applicant's project will comply with state water quality standards and other aquatic resource protection requirements under Ecology's authority.

Use	Current Conditions and Foreseeable Development	Shoreline Processes Effected / Potential Impacts	Effect of SMP Policies and Regulations – Expected Improvements	Effect of Other Regulatory Programs
				Washington State Water Pollution Control Act – All projects effecting surface waters in the state, including those that are not subject to the Federal Clean Water Act sections 404/401 must still comply with the provisions of the State's Water Pollution Control Act (RCW 90.48)
Residential Development	Current Conditions: Large areas of the shoreline are currently developed as single-family residential use including Reaches Lk_SAM01, Lk_Sam03, G, H, and Y) or multi-family residential use (Reaches B, C, and E). Foreseeable Development: Nearly all of the shorelines zoned for multi-family residential uses are presently developed. Areas zoned for single-family residential along the lakeshore and in the lower reaches of the creek are primarily developed. Opportunities for new development are extremely limited, but redevelopment is possible in those areas.	Residential development has traditionally increased the amount of impervious surface through roads, buildings and structures; increased shoreline armoring and overwater structures; and decreased native shoreline vegetation. The results have been loss of riparian habitat and LWD recruitment potential, altered hydrology, degraded water quality and lack of connection between creek and floodplain. Residential development can also be a source of excessive nutrients from lawn care and fertilizer use. Ecological Functions at Risk: Habitat (riparian and lakeshore) Water Quality Hydrology	Improvements: Lake Shoreline: Improvements Proposed SMP establishes new buffer/setback provisions for all new residential development, redevelopment and expansion of existing residences on the Lake Sammamish shorelands: New Residential Development and Redevelopment SMP requires 35-foot buffer and 15-foot building setback and 80% of buffer must be enhanced with native plants to improve buffer functions. (6.1.3.4) Expansion of Existing Residences Expansion not allowed into buffer and building setback. Expansions over 500 SF require an equal area of buffer enhancement. (6.1.3.5) Bulkhead Removal The only lakeshore buffer reduction allowed is for removal of an existing bulkhead, the shoreline buffer may be reduced from 35 feet to a minimum of 10 feet if an existing bulkhead is removed and replaced with natural softshore stabilization. (6.1.3.3) Creek Shoreline: Improvement Residential Development - Establishes 100-foot buffer for residential development consistent with the City's CAO; encourages buffer enhancement and removal of shoreline armoring. (7.2.2.11) Multi-family Development - Requires a 200-foot buffer/setback on the Issaquah Creek Urban Conservancy shoreline designation. (7.2.2.10)	City Permits and Regulations: City Planning Department permits, building permits & clear and grade permits City approved Shoreline Substantial Development Permit or Shoreline permit exemption City critical areas requirements. State and Federal Programs: Federal Endangered Species Act (ESA) Federal Rivers and Harbors Act – Army Corps of Engineers Section 10 permit Army Corps of Engineers 404 permit Hydraulic Project Approval (HPA) permitting process (WDFW) Department of Ecology Water Quality Certification (see details of State and Federal Programs under Commercial Development)
Docks, Piers, Floats, Boat launches, Boat Lifts and Mooring Buoys	Current Conditions: Nearly all properties (91 percent) on Lake Sammamish (excluding Lake Sammamish State Park) have a private dock accessory to the primary structure. The only motor boat launch on Lake Sammamish is located within Lake Sammamish State Park. There are currently no permitted docks, piers, floats, buoys or boat lifts on Issaquah Creek. Foreseeable Development: New docks or piers on Lake Sammamish are possible at less than 10 percent of the lake shore properties. Repair, reconstruction and redevelopment of existing docks are likely activities. Issaquah Creek is too small to accommodate docks, piers, floats, or	Lake Sammamish - Over-water structures typically result in degradation of native fish habitat through loss of native vegetation and altered predator/prey relationships because of shade. Materials used for docks, piers and floats have also traditionally been a source of toxic chemicals to the water. Ecological Functions at Risk: Lakeshore & Aquatic Habitat Water Quality	Improvements: Proposed SMP establishes maximum dock size/area and dock width standards, requires decking to allow 40% light transmittance, requires non-toxic materials for structures in contact with water, and requires nearshore buffer enhancement. (6.1.5) Improvements are also required for minor repairs to existing docks. For example, where more than 50% of existing decking is replaced, the new deck materials must be grated to allow light transmittance. Repairs of existing piles must use approved, non-toxic materials and piles must minimize the diameter and maximize spacing between piles. ((6.1.5.27)	City Permits and Regulations: City approved Shoreline permit exemption City clear and grade permit State and Federal Programs: Federal Endangered Species Act (ESA) Federal Rivers and Harbors Act – Army Corps of Engineers Section 10 permit Hydraulic Project Approval (HPA) permitting process (WDFW) (see details of State and Federal Programs under Commercial Development)

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	other over water structures. No such structures are anticipated.			
Shoreline Stabilization (excluding residential bulkheads)	Current Conditions: Issaquah Creek The shoreline of the Mainstem Issaquah Creek is extensively armored. Bank armoring ranges from 25% to 50% in the lower reaches (A through F) and less than 20% in the upper reaches (G and H). Along the East Fork, nearly 40% of the banks are armored in the lower reaches (X and Y) and the upper reaches (Z and ZZ) are relatively natural. Lake Sammamish The Lake Sammamish shoreline is moderately to highly altered. Approximatly70% of the parcels in the Greenwood Point neighborhood have concrete or rock bulkheads. The shorelines of Sammamish Cove park and Lake Sammamish State Park (Reach Lk_Sam_03 contains a moderate level of shoreline modification. Foreseeable Development: Issaquah Creek Demand for shoreline armoring along Issaquah Creek is likely to be associated with anticipated new residential development. Armoring associated with flood control measures may be associated with redevelopment of existing residential or commercial development. Lake Sammamish Because nearly all of the privately owned parcels on Lake Sammamish currently have some form of bulkheads, the foreseeable demand for new bulkheads is low. However, bulkhead repair and replacement are likely.	Shoreline armoring and hard shoreline stabilization structures affect shoreline ecological functions by severing the link between the land and water. Armoring, in particular, results in lack of channel complexity, loss of connection between the creek and its floodplain, altered hydrology, and loss of habitat. Ecological Functions at Risk: Habitat (riparian and lakeshore) Hydrology Fluvial and lake geomorphic processes	Improvements: Proposed SMP establishes policies to promote/encourage removal of hardshore armoring or use of soft shoreline stabilization techniques. (5.12.1.1) Establishes policies to locate/design shoreline development to prevent or minimize the need for shoreline protection and stabilization. (5.12.1.5) New bulkheads/hard shoreline armoring shall demonstrate with a geotechnical analysis that bulkheads or similar hard structures are necessary to prevent erosion from damaging an existing structure. (6.1.4.4, 7.1.3.2 and 5) New bulkheads and expansion of existing bulkheads shall include design recommendations to minimize impacts of sediment transport and to ensure no net loss of ecological functions. (6.1.4.5.d, 7.1.3.4) New bulkheads and expansion of existing bulkheads and shoreline stabilization shall incorporate "Green Shoreline" features to minimize adverse effects on nearshore habitat, including; using native vegetation, large wood, rock, etc. (6.1.4.3, 7.1.3.3) Replacement or major repairs of existing shoreline stabilization shall not encroach further waterward of the existing structure, shall be replaced in the same location with similar dimensions, shall assess the necessity of structural stabilization and shall incorporate measures to ensure no net loss of ecological functions. (6.1.4.7, 7.1.3.6) Proposed SMP establishes specific thresholds for what constitutes a major repair/replacement versus minor repairs to existing shoreline stabilization and requires major repair/replacement to demonstration need, alternatives, and measures to minimize impacts. (6.1.4.6, 7.1.3.8)	City Permits and Regulations: City critical areas requirements. Shoreline conditional use permit SEPA review and potential for mitigation. State and Federal Programs: Federal Endangered Species Act (ESA) Federal Rivers and Harbors Act – Army Corps of Engineers Section 10 permit Army Corps of Engineers 404 permit Hydraulic Project Approval (HPA) permitting process (WDFW) Department of Ecology Water Quality Certification (see details of State and Federal Programs under Commercial Development)
Dredging	Current Conditions: Dredging for fill materials or to alter the bottom of Lake Sammamish or Issaquah Creek is currently allowed as a conditional use. Foreseeable Development: Dredging within the City's shorelines would require a conditional use permit, except for ecological restoration projects where it is a permitted use if less than 25 cubic yards are removed.	Dredging and fill within water bodies impacts the waterbodies bottom substrate, water quality, and habitat. Ecological Functions at Risk: Aquatic Habitat Water Quality Fluvial and lake geomorphic processes	Improvements: Proposed SMP specifies that dredging is only allowed for ecological restoration projects, bulkhead removal, Citysponsored flood management purposes, MTCA/CERCLA cleanup, and requires mitigation measures to minimize adverse environmental impacts. (5.15.2)	City Permits and Regulations: City clear and grade permits City critical areas requirements. SEPA and potential for mitigation. NPDES Construction Stormwater General Permit and Coverage; NPDES Individual Permit for wastewater discharge to surface waters; State and Federal Programs: Federal Endangered Species Act (ESA)

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	-	•		Section 10 permit
				Army Corps of Engineers 404 permit
				Hydraulic Project Approval (HPA) permitting process (WDFW)
				Department of Ecology Water Quality Certification
				(see details of State and Federal Programs under Commercial Development)
Excavation and	Current Conditions: Excavation is allowed in the shoreline as part of a permitted residential, commercial, infrastructure development project.	Excavation typically includes the removal of vegetation, which can adversely effects wildlife habitat and bank stability. Without the use of required construction BMPs, excavation can increase erosion into waterbodies impacting water quality. Ecological Functions at Risk: Habitat (aquatic, riparian and lakeshore) Water Quality	Improvements: Under proposed SMP all excavation and fill in the shoreline would continue to be allowed only when associated with a permitted use and must be the minimum necessary to	City Permits and Regulations:
Filling				City Planning Department permits, building permits & clear and grade permits
			accommodate the development. All excavation activities	City critical areas requirements.
	Foreseeable Development:		would have to comply with current City regulations for grading and erosion and sediment control and include mitigation for impacts. (5.16.2) Proposed SMP regulations specify that fill and excavation shall be permitted only where it is demonstrated that it would not result in significant ecological damage, alter surface flow movement or drainage patterns, inhibit channel migration, reduce floodplain storage capacity, etc. (5.16.2)	City approved Shoreline Substantial Development Permit
	Most new development requires some level of excavation for foundations and/or utility installations. Areas available for new development, and therefore excavation, are limited to the upper			NPDES Construction Stormwater General Permit and Coverage;
				NPDES Individual Permit for wastewater discharge to surface waters;
	reaches of Main Stem Issaquah Creek. Redevelopment throughout the shoreline			State and Federal Programs:
	could entail excavation, but would be expected to be less intense and less	Fluvial and lake geomorphic processes	Filling waterward of the OHWM is only allowed for	Army Corps of Engineers 404 permit
	frequent than in undeveloped areas.		ecological restoration or enhancement projects, bio- engineered shoreline stabilization, and publically sponsored public access projects. (5.16.2.6)	Department of Ecology Water Quality Certification
In-Stream	Current Conditions: The current SMP doesn't specifically address in-stream structures. The only existing in-stream structures are associated with the WDFW hatchery in Reach F.	Structural in-stream structures alter natural hydrologic and sediment processes and represent barriers to fish passage. Ecological Functions at Risk: Hydrology Fluvial geomorphic processes	Improvements: Proposed SMP specifies that in-stream structures shall only be allowed when associated with a watershed restoration project or a water dependent use such as the fish hatchery. The proposed SMP also includes standards that in-steam structures be designed/located to minimize the need for structural shoreline stabilization, that natural in-stream features such as snags and stumps be left in place, and that in-stream structures provide for migration of anadromous fish. (7.1.3.16-20)	City Permits and Regulations:
Structures				City Planning Department permits & clear and grade permits
				City critical areas requirements.
				SEPA and potential for mitigation.
	Foreseeable Development: Under the proposed SMP in-stream structures would continue to be prohibited, with the exception of those allowed for the purpose of environmental restoration or for water dependent uses such as the fish hatchery.			City approved Shoreline Substantial Development Permit
				State and Federal Programs:
				Hydraulic Project Approval (HPA) permitting process (WDFW)
				Department of Ecology Water Quality Certification
				Army Corps of Engineers 404 and/or Section 10 permits
Public Access	Current Conditions: The City of Issaquah has a relatively large amount of publicly owned land that offers both visual and physical access to the City's SMA shorelines and provides opportunities for shoreline restoration. Approximately 43% of the total shoreline area is in public ownership and another 8% is right-of-way. The current SMP doesn't differentiate water-oriented and non-water oriented recreational development, and it doesn't	Park and recreation facilities that do not require structures are unlikely to impact shorelines processes and functions. Park development usually includes a restoration or enhancement element, improving existing critical area functions. Facilities involving new structures are subject to permitting requirements and regulations of the SMP, which require the maintenance or improvement of shoreline functions. Foreseeable	Improvements: Proposed SMP distinguishes between water-oriented and nonwater-oriented public recreational uses and development in order to encourage/prioritize water-oriented recreation development, as follows: Lake Sammamish - Public recreational development that is non-water oriented requires a conditional use permit. Public boat launches also require a conditional use permit. (Table 1) Issaquah Creek – Nonwater-oriented recreational development requires public access and ecological restoration. (7.3.2.10)	City Permits and Regulations: City critical areas requirements.
and Recreational Use and Development				SEPA and potential for mitigation.
				City approved Shoreline Substantial Development Permit
				City building permits & clear and grade permits.
				NPDES Construction Stormwater General Permit and Coverage.
				NPDES Individual Permit for wastewater discharge to surface waters.
	specify requirements for public access.	impacts are unlikely.	105001011011. (7.3.2.10)	State and Federal Programs: In-water work may require

Use	Current Conditions and Foreseeable Development	Shoreline Processes Effected / Potential Impacts	Effect of SMP Policies and Regulations – Expected Improvements	Effect of Other Regulatory Programs
	Foreseeable Development: The City is expected to acquire additional shoreline property and continue to improve existing City-owned properties with passive park and public access amenities and restoration projects. A large part of the City-owned lands were acquired partially with grant funds intended to protect fish and wildlife habitat and include limits on development and active parks improvements.	Ecological Functions at Risk: Habitat (riparian and lakeshore)	Proposed SMP specifies that structures for water enjoyment uses, such as picnic shelters and view platforms may be permitted in the outer 50% of the buffer with a maximum footprint not exceeding 10% of the total buffer area. (6.2.2.4) Proposed SMP includes standards limiting removal of vegetation for recreation development, incorporating erosion control measures, use of native plants, etc. (7.3.2) Public Access Public access is required for commercial, industrial, public parks, and large-scale residential development. (5.3.2.4)	the following: Hydraulic Project Approval (HPA) permitting process (WDFW) Department of Ecology Water Quality Certification Army Corps of Engineers 404 and/or Section 10 permits
Transportation, Parking and Utility Facilities	Current Conditions: Transportation infrastructure and utility corridors occur throughout the shoreline. I-90 constitutes a major transportation use within the Mainstem and East Fork shorelines. Foreseeable Development: Most of the shoreline areas in the City are built out. Future use will likely require updated roads and utility infrastructure.	Road maintenance projects have the potential to increase erosion and associated sediment input to aquatic environments, but impacts are not likely due to the implementation of BMPs. Other impacts are unlikely, as transportation and utility infrastructure are to be located outside of the shoreline jurisdiction. Ecological Functions at Risk: Riparian Habitat Hydrology Fluvial geomorphic processes	Improvements: Proposed SMP includes requirements that new roads, parking, and primary utility facilities (e.g., stormwater treatment ponds, wastewater pump stations, electrical substations, etc.) be located outside shoreline jurisdiction or as far away from the shoreline as possible, new roads and parking limited to what directly serves a permitted use, and be located/designed to have minimum impacts on shoreline resources. (5.17.2, 5.11.2, 5.18.2)) Also Transportation High Intensity Environment Management Policies: 4.4.2.3	City Permits and Regulations: City critical areas requirements. SEPA and potential for mitigation. City approved Shoreline Substantial Development Permit City building permits & clear and grade permits. NPDES Construction Stormwater General Permit and Coverage. NPDES Individual Permit for wastewater discharge to surface waters. State and Federal Programs: Allowed facilities such as stormwater or wastewater outfalls may require WDFW and/or Corps permits for in-water work.
Restoration Plans and Projects	Current Conditions: Since 1994, the City had completed approximately 30 restoration projects on City streams, 20 of which are associated with Mainstem Issaquah Creek. The City completed a Stream and Riparian Areas Restoration Plan (Watershed Co. 2006) identifying and prioritizing sites for restoration. The City continues to implement a variety of restoration efforts, including; removal of flood berms, side channel creation, installation of bioengineered bank protection; culvert replacement; placement of LWD; removal of invasive species such as Himalayan blackberry and English ivy; and, in almost every project, planting of native riparian vegetation.	Benefits to the shoreline will occur through restoring shoreline ecological functions and processes where they have been degraded through programmatic or site specific restoration actions.	Improvements: Under proposed SMP ecological restoration is specifically required for expansion of single family residences on Lake Sammamish (6.1.3.5), non-water oriented commercial and industrial development, large-scale residential development (7.1.2.3), and public parks (7.3.2.10). The City will encourage restoration/enhancement projects using strategies such as a simplified permit process, reducing fees, public outreach/assistance. (5.4.2) The SMP Restoration Plan establishes a policy basis and priorities for shoreline restoration actions.	City Permits and Regulations: City critical areas requirements. SEPA and potential for mitigation. City approved Shoreline Substantial Development Permit City building permits & clear and grade permits. NPDES Construction Stormwater General Permit and Coverage. NPDES Individual Permit for wastewater discharge to surface waters. State and Federal Programs: Allowed facilities such as stormwater or wastewater outfalls may require WDFW and/or Corps permits for in-water work.